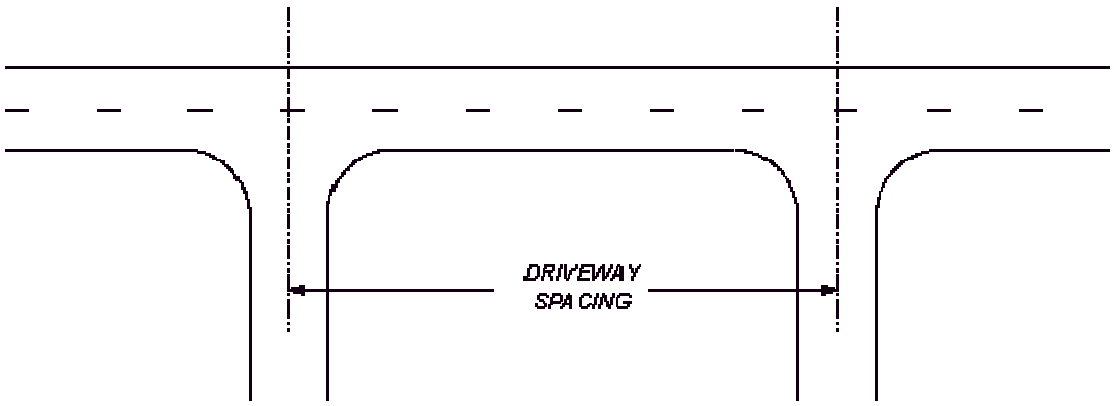
3A SPACING OF DRIVEWAYS

As drivers approach each intersection along a roadway, they are often presented with decisions and may be required to stop or make various maneuvers. When exiting the roadway, it is necessary to decelerate and in some cases, to change lanes. It may also be necessary to adjust speeds in reaction to other vehicles entering into the arterial traffic stream. Driveways should be spaced so that drivers can perceive and react to the conditions at each intersection in succession. Spacing between driveways should be at least equal to the distance traveled, at the posted speed limit, during the normal perception and reaction time plus the distance traveled as the vehicle decelerates to a stop.

Each intersection also requires a certain amount of storage space for vehicles waiting to enter. The distance between intersections should be great enough to provide this storage, allowing each intersection to have its functional boundary separated from those of the next intersection. Crash data also indicate that as the number of driveways along a roadway increases so do accident rates. **Meeting the spacing criteria is not, in itself an indication that driveways will be allowed.**

Guidelines for driveway spacing, associated with the construction of new driveways, are provided in Table 3-1. Driveways should be separated from any other facility, which accesses a State Highway, whether it is another driveway or a public street. Minimum spacing requirements also apply to driveways on the opposite side of undivided roadways. Variances are defined in Section 2E-1. **Requirements for the length of right and left turn lanes, as shown in Table 4-8 and Table 4-9, may increase the minimum allowable spacing shown in Table 3-1.**



POSTED SPEED, MPH	DRIVEWAY SPACING MINIMUM, Ft
25	125
30	125
35	150
40	185
45	230
50	275
55	350
60	450
65	550

Table 3-1 Driveway Spacing Criteria

3A-1 SPACING OF ONE-WAY DRIVEWAYS

Figure 3-1 shows a typical layout of one-way driveways. The spacing criteria presented in Table 3-1 does not apply to the distance between the two one-way driveways (driveway pair).

A driveway pair must be separated from another driveway pair by the distance as shown in Table 3-1. A driveway pair must also be separated from an adjacent two-way driveway in accordance with the spacing criteria in Table 3-1.

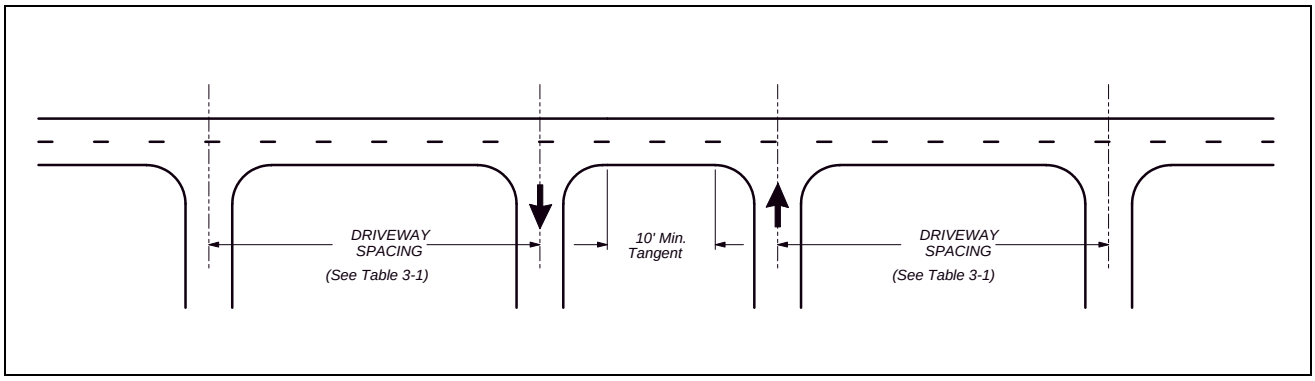


FIGURE 3-1 SPACING CRITERIA FOR ONE-WAY DRIVEWAYS

3A-2 PLACEMENT OF DRIVEWAYS

Not only must driveways be spaced from other driveways as provided above, they must also be located a minimum distance from the property line. The radius return must be a minimum of 4' from the property line.

When driveways are to be jointly used by two or more property owners, the property line separation requirements given in the above paragraph can be waived. However, a joint use agreement signed by the affected property owners must be provided to the Access Management Engineer. Either property owner may apply for the driveway permit.

3B DRIVEWAY ALIGNMENT

Driveways should align with other driveways located on the opposite side of the State Highway. If offset driveways cannot be avoided, the same driveway spacing criteria as given in Table 3-1 should be provided, to provide space for left turns. Figure 3-2 shows how the spacing is measured for spacing offset driveways onto undivided highways. Spacing is from Center to Center.

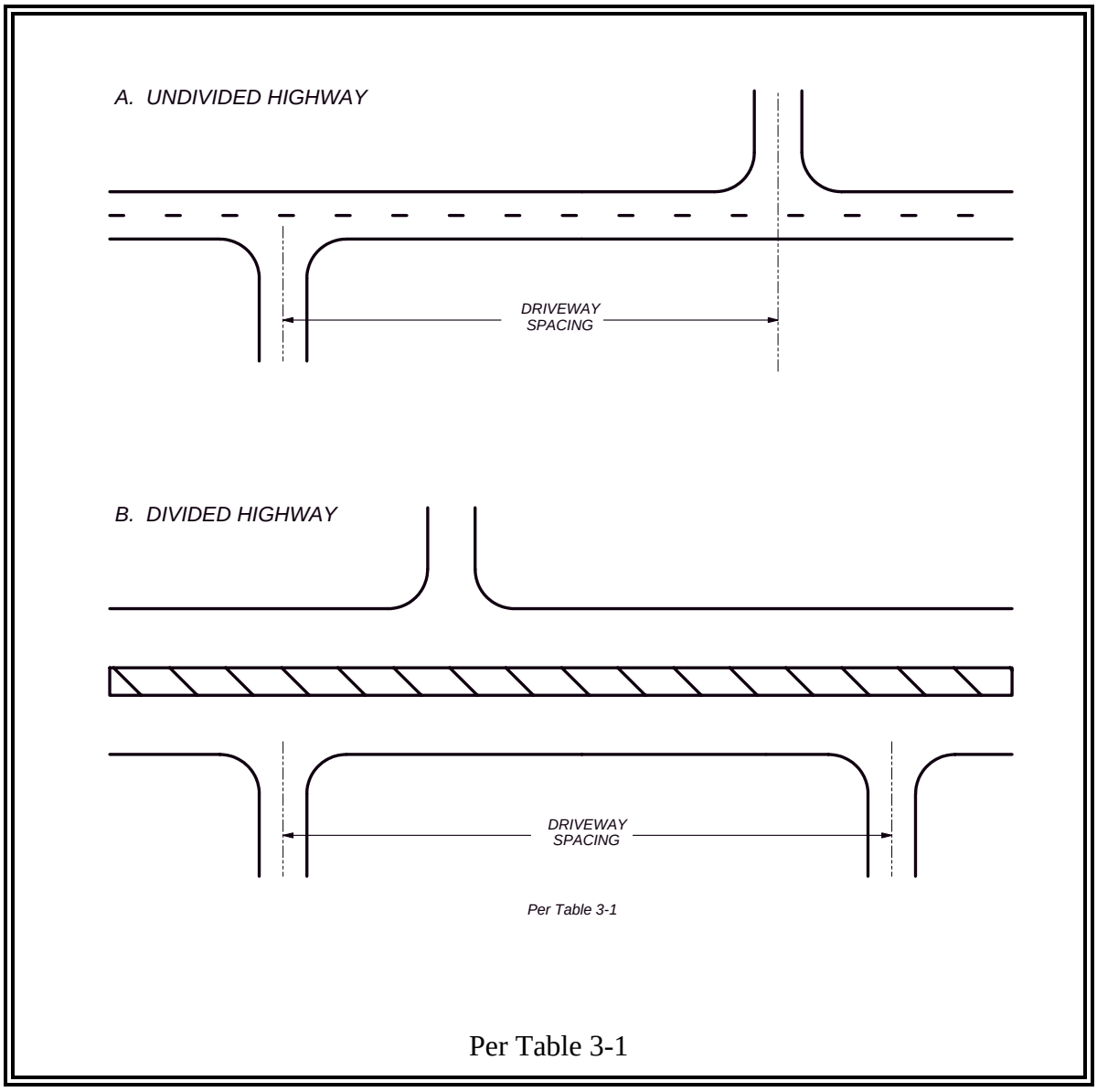
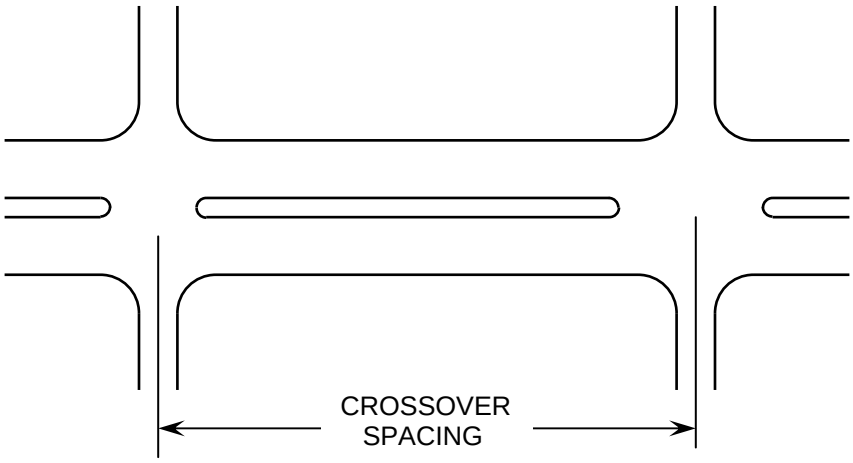


FIGURE 3-2 SPACING OF OFFSET DRIVEWAYS

If the State Highway involved is a divided facility and the driveways do not align with a median crossover the driveway spacing would only apply to the adjacent driveway located on the same side of the Highway as shown above in Figure 3-2 (B).

3C SPACING OF MEDIAN CROSSOVERS

When the applicant is requesting a median crossover on a divided highway, the spacing standards shown in Table 3-2 apply.



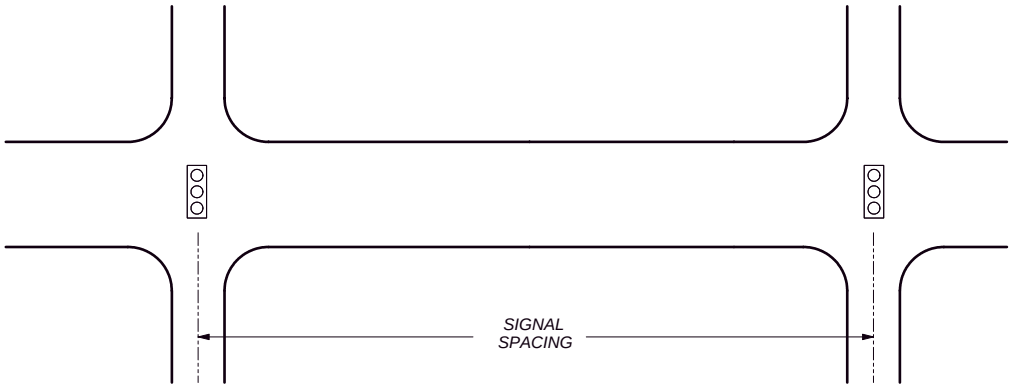
CONDITION	CROSSOVER SPACING, Ft	
	Desirable	Minimum
RURAL	2640	1320
URBAN	1320	660

TABLE 3-2 SPACING OF MEDIAN CROSSOVERS

Other factors will also be considered, such as distance to other median openings, adjacent land use, expected traffic volumes, and the resulting volume of U-turns that are likely to occur without the median opening. **Meeting the spacing criteria is not, in itself, an indication that median openings will be allowed.** Refer to TOPPS Policy 4A-4 for medians requiring a break in limited access right-of-way. All median openings will be approved by the Director of Operations or their designee for existing facilities.

3D SPACING OF SIGNALIZED INTERSECTIONS

This section is provided to assist the applicant's engineer in designing sites that may need signalized points of access to the State Highway System. Table 3-3 contains guidelines for the spacing that should be provided between signalized intersections.



CONDITION	SIGNAL SPACING, Ft	
	DESIRABLE	MINIMUM
RURAL	2640	1320
URBAN	1320	1000

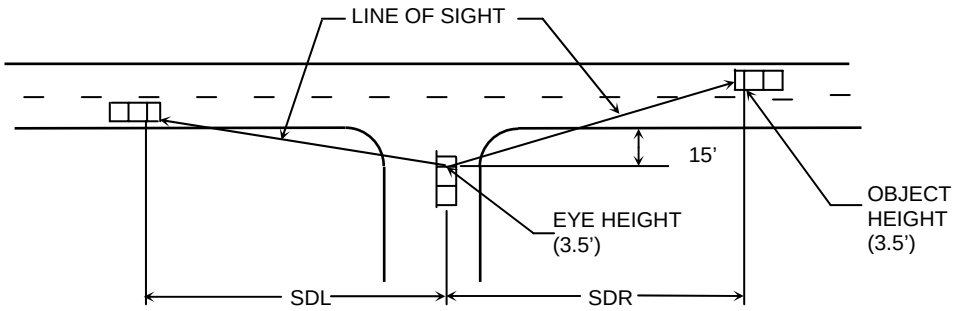
TABLE 3-3 SPACING OF SIGNALIZED INTERSECTIONS

The spacing guidelines provided above are indicative of conditions that normally offer better signal progression for arterial traffic flow. It is recognized that under certain conditions, better operation may result from the introduction of signals with less spacing if the alternative forces high volumes of traffic to an adjacent intersection.

When the applicant can show, through an alternatives analysis, that better operations can be achieved with less spacing, the Department will consider an exception to the provisions of Table 3-3.

3E SIGHT DISTANCE

Driveways should be located to provide adequate sight distance. Minimum intersection sight distance criteria are provided in Table 3-4. The line of sight establishes the boundary of a sight triangle, within which there should be no sight obstruction.



ARTERIAL SPEED, MPH	SIGHT DISTANCE, Ft				
	2 Lane	3 and 4 Lanes		5 and 6 Lanes	
	SDL=SDR	SDL	SDR	SDL	SDR
30	335	350	375	400	420
35	390	410	440	465	490
40	445	470	500	530	560
45	500	530	560	595	630
50	555	590	625	660	700
55	610	650	685	730	770
60	665	705	750	795	840
65	720	765	810	860	910

TABLE 3-4 INTERSECTION SIGHT DISTANCE REQUIREMENTS

The sight distance criteria are based on the time required for a vehicle to make a left turn from a stop-controlled approach to the State Highway (AASHTO Case B1). The time to execute the maneuver is based on recommendations contained in NCHRP Report 383, *Intersection Sight Distance*. The sight distances, for a two-lane road, are the distances traveled at the arterial speed during 7.5 seconds. The time is increased by 0.5 seconds for each additional lane to be crossed.

The sight distances given in Table 3-4 are for undivided highways. If the highway is divided, the effect of the median should be considered in determining the required sight distance. Based on the conditions, it may be feasible for the crossing maneuver to be done in two stages with a stop in the median. However, the intersection should only be treated in this manner if the signing and marking is accordingly provided. Otherwise, the sight distance requirements should be increased to account for the additional width that must be crossed. See AASHTO Green Book, Chapter 9 Intersections, for adjustments due to grades greater then 3% and design vehicles other than passenger cars.